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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,873	04/20/2004	Eddy Ying Yin Ho	IR-2458 (2-3615)	5615

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EXAMINER

DAVIS, OCTAVIA L

ART UNIT

PAPER NUMBER

2855

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/828,873

Applicant(s)

HO, EDDY YING YIN

Examiner

Octavia Davis

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/29/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 9, 10, 17 – 20, 27, 28, 35 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Ray.

Regarding claims 1, 2, 10, 19, 20 and 28, Ray discloses a sensorless rotor position measurement system comprising steps of estimating the rotor angle (See Col. 3, lines 39- 44), correcting the estimated rotor angle on the basis of reactive power input to the motor (See Col. 4, lines 37 – 56), integrating stator voltage and current values utilizing integrators 9 and estimating the rotor angle during motor start-up according to a predetermined motor load model in conjunction with a start-up sequencer 3 (See Col. 3, lines 39 – 44).

Regarding claims 9, 17, 27 and 35, the position of the angle is estimated (See Col. 2, lines 55 - 65).

Regarding claims 18 and 36, the estimation step includes the step of correcting phase errors caused by said integration via a circuit with phase compensation (F) (See Cols. 3 and 4, lines 45 – 51 and 43 – 46).

### *Claim Rejections - 35 USC § 103*

Art Unit: 2855

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3 - 8, 11 - 16, 21 - 26 and 29 - 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ray in view of Schroedl et al.

Regarding claims 3 - 8, 11 - 16, 21 - 26 and 29 - 34, Ray discloses all of the limitations of these claims except for a teaching that the load model is representative of motor acceleration/friction torque, motor frequency and current feedback. However, Schroedl et al disclose a method and circuit arrangement for the sensorless detection of the angle of rotation of a synchronous machine comprising a permanent magnet-excited synchronous machine 81 supplied by a voltage intermediate circuit frequency 83 and a position detection unit 88 receiving currents from a current measuring device 32, wherein the rotor position is corrected using instantaneous estimated values of position, rpm, torque, flux amount and circuit voltage and each value is supplied to a correcting member 89 via line 91 (See Col. 10, lines 26 - 40 and 46 - 65).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ray according to the teachings of Schroedl et al for the purpose of, utilizing the corrected rotor position information as an adaptation of the position determined by the voltage module (See Schroedl et al, Col. 10, lines 41 - 45).

### *Conclusion*

Art Unit: 2855

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Luukko (6,396,236) discloses a method of minimizing errors in a rotor angle estimate in a synchronous machine.

Chen (6,377,019) discloses an induction motor control system for electric vehicles.

Chen (6,327,524) discloses a device for high efficiency motor control.

Slicker et al (4,777,422) disclose an induction motor flux estimator/controller.


6. Any inquiry concerning this communication should be directed to examiner Octavia Davis at telephone number (571) 272 - 2176. The examiner can normally be reached on Monday - Thursdays (9:00 - 5:00), Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz, can be reached on (571) 272 - 2180. The fax phone number for the organization where this application where this application or proceeding is assigned is (703) 872 - 9306.

*ED*

OD/2855

12/22/04

  
EDWARD LEFKOWITZ  
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